



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/577,312	04/28/2006	Hiroyuki Takamura	28984.0051	4958
27890	7590	09/24/2009	EXAMINER	
STEPTOE & JOHNSON LLP 1330 CONNECTICUT AVENUE, N.W. WASHINGTON, DC 20036				TAOUSAKIS, ALEXANDER P
ART UNIT		PAPER NUMBER		
3726				
		MAIL DATE		DELIVERY MODE
		09/24/2009		PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/577,312	TAKAMURA, HIROYUKI	
	<b>Examiner</b>	<b>Art Unit</b>	
	ALEXANDER P. TAOUSAKIS	3726	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 28 April 2006.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-7 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-7 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date 04/28/2006.

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Objections***

Claims 1-6 are objected to because of the following informalities:

In claim 1, line 3, "the cam lob" should be changed to ---the cam lobe--- and "shaft" should be changed to ---camshaft---.

In claim 1, line 1, "cam shaft" should be changed to ---camshaft---.

In claim 2, line 1, "cam shaft" should be changed to ---camshaft---.

In claim 3, line 1, "cam shaft" should be changed to ---camshaft---.

In claim 3, line 3 "shaft" should be changed to ---camshaft---.

In claim 4, line 1, "cam shaft" should be changed to ---camshaft---.

In claim 5, line 1, "cam shaft" should be changed to ---camshaft---.

In claim 6, line 1, "cam shaft" should be changed to ---camshaft---.

Claims 1 fails to positively recite the method step. It is suggest that claim 1 be re-written as follows: ---A method of manufacturing a camshaft, comprising: subjecting an inner circumferential surface of a cam lobe to residual compressive stress addition treatment, then joining the cam lobe to a shaft---. Appropriate correction is required.

Claim 3 fails also to positively recite the method step. It is suggest that claim 3 be re-written as follows: The limitations of "subjected to" and "is joined" should be changed to ---subjecting--- and ---joining---, respectively.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recites the limitation "the outer peripheral surface" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claims 1, 3 and 5-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Ohara et al (6,775,908).**

1, 6-7. Ohara et al teaches a method of manufacturing a camshaft (see *column 1 lines 6-13*), comprising subjecting the cam lobe to a residual compressive stress addition treatment (see *column 10 lines 25-36*, where it discloses subjecting the inner section of

*the cam lobe piece to carburizing hardening), then joining the cam lobe to a camshaft (see column 10 lines 37-38).*

3. Ohara et al teaches the method of manufacturing according to claim 1, wherein an outer peripheral surface of the cam lobe is also subjected to treatment for residual compressive stress addition treatment prior to joining the cam lobe to the camshaft (see *column 10 lines 25-38*).

5. Ohara et al teaches the method of manufacturing according to claim 1, wherein the compressive stress addition treatment is carburizing and quenching (see *column 7 lines 55-57, where it discloses quenching and column 10 lines 25-38, where it discloses carburizing of the cam lobe*).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohara et al (6,775,908) in view of Barth et al (6,438,836).**

2, 4. Ohara et al teaches the method of manufacturing according to claim 1, but fails to teach residual compressive stresses on the inner circumferential surface and the outer peripheral surface of the cam lobe is no less than 100 MPa.

Barth et al teaches compressive stress on a inner circumferential surface of the cam lobe up to 250 N/mm<sup>2</sup> and a compressive stress of 200 N/mm<sup>2</sup> on the outer peripheral surface of the cam lobe (see *column 3 lines 63-67 – column 4 lines 1-4*).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to treat the cam lobe of Ohara et al to a compressive stress of 250 N/mm<sup>2</sup> and 200 N/mm<sup>2</sup> on its inner and outer surfaces, respectively, as taught by Barth et al, because it will prevent cracking during joining (see *column 3 lines 29-30*).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEXANDER P. TAOUSAKIS whose telephone number is (571)272-3497. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bryant can be reached on (571) 272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Alexander P Taousakis  
Examiner  
Art Unit 3726

/Alexander P Taousakis/  
Examiner, Art Unit 3726

/DAVID P. BRYANT/  
Supervisory Patent Examiner, Art Unit 3726